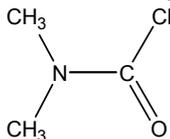


DIMETHYLCARBAMOYL CHLORIDE

CAS No. 79-44-7

First Listed in the *Second Annual Report on Carcinogens*



CARCINOGENICITY

Dimethylcarbamoyl chloride is *reasonably anticipated to be a human carcinogen* based on sufficient evidence of carcinogenicity in experimental animals (IARC 1976, 1982, 1987, 1999). When applied topically, dimethylcarbamoyl chloride induced skin papillomas (most of which progressed to carcinomas) in female mice. When injected subcutaneously, dimethylcarbamoyl chloride induced local sarcomas in female mice. When administered by inhalation, dimethylcarbamoyl chloride induced carcinomas of the nasal tract in rats and male hamsters (IARC 1999).

No adequate data were available to evaluate the carcinogenicity of dimethylcarbamoyl chloride in humans (IARC 1976, 1982, 1987, 1999).

PROPERTIES

Dimethylcarbamoyl chloride is a colorless liquid. It rapidly hydrolyzes in water to dimethylamine, carbon dioxide, and hydrogen chloride. Dimethylcarbamoyl chloride will react with water or steam to produce toxic and corrosive fumes. When heated to decomposition, it emits toxic fumes of hydrogen chloride and other chlorinated compounds as well as nitrogen oxides (HSDB 2001).

USE

Dimethylcarbamoyl chloride is used primarily as a chemical intermediate in the production of dyes, pharmaceuticals, and pesticides (IARC 1999, HSDB 2001).

PRODUCTION

Dimethylcarbamoyl chloride has been produced since 1961 (IARC 1999); however, the compound is not commercially produced in the U.S. (HSDB 2001). Chem Sources (2001) identified seven U.S. suppliers of the compound. Two companies were identified that imported 500 lb of dimethylcarbamoyl chloride in 1977 (TSCA 1979).

EXPOSURE

The primary routes of potential human exposure to dimethylcarbamoyl chloride are inhalation and dermal contact. Significant potential human exposure to dimethylcarbamoyl chloride is restricted to chemical workers, pesticide formulators, dye makers, and pharmaceutical workers. Dimethylcarbamoyl chloride has been released to the environment as a result of its

manufacture and use as an intermediate in the manufacture of pesticides and drugs (HSDB 2001).

EPA's Toxic Chemical Release Inventory (TRI) reported that three facilities released dimethylcarbamoyl chloride in the U.S. in 1999. These facilities released a total of 99 lb to air and one pound to surface water (TRI99 2001).

REGULATIONS

EPA regulates dimethylcarbamoyl chloride under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), Resource Conservation and Recovery Act (RCRA), and Superfund Amendments and Reauthorization Act (SARA). EPA established a reportable quantity (RQ) of 1 lb under CERCLA. Dimethylcarbamoyl chloride is subject to reporting and record-keeping requirements under RCRA and SARA.

OSHA regulates dimethylcarbamoyl chloride under the Hazard Communication Standard and as a chemical hazard in laboratories. Regulations are summarized in Volume II, Table 76.

REFERENCES

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HSDB. Hazardous Substances Data Bank. Online database produced by the National Library of Medicine. Dimethylcarbamoyl chloride. Profile last updated August 8, 2001.

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TRI99. Toxic Chemical Release Inventory 1999. Data contained in the Toxic Chemical Release Inventory (TRI). Available from the U.S. Environmental Protection Agency Office of Environmental Information, <http://www.epa.gov/triexplorer/reports.htm>, 2001.

TSCA. Toxic Substances Control Act, Chemical Substance Inventory, 1979: public record.